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BC Timber Sales

Road Reporting Task Team (RRTT)

As- Built Roads (ABR) Road Data Clean Up

Revised: July 11, 2005
Version 1.0

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June 14, 2005

Version	Date of Issue	Author(s)	Brief Description of Change
1.0	June 14, 2005	Dan Vasiga	
	July 11, 2005	Dan Vasiga	Page 26 updated fixing Must be single part errors



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Overview

Purpose: The purpose of this document is to provide a guide for cleaning up road data in preparation for As Built Road Submissions within ArcMap and Geo. This Guide will walk users through some standard procedures for cleaning up errors commonly encountered in roads.

Topology rules have been applied to roads to help identify and streamline the data clean-up process. It should also be noted that some topology errors may be valid and can be marked as exceptions in the editing process.

Topology Rules Applied

- **ROADS**
 - Must not overlap
 - Must not have pseudo-nodes
 - Must not self overlap
 - Must not self intersect
 - Must be single part



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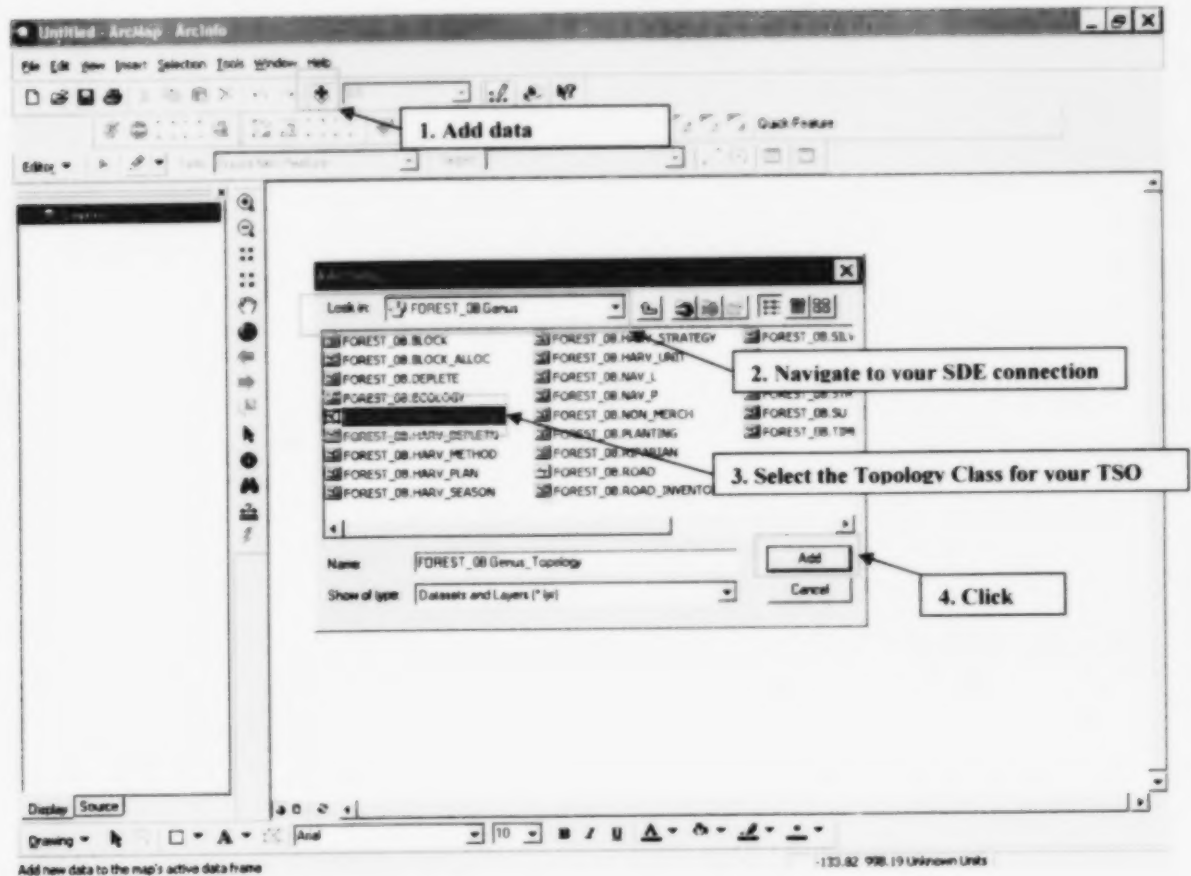
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Procedure

1. Ensure the topology class is added to your Edit Session





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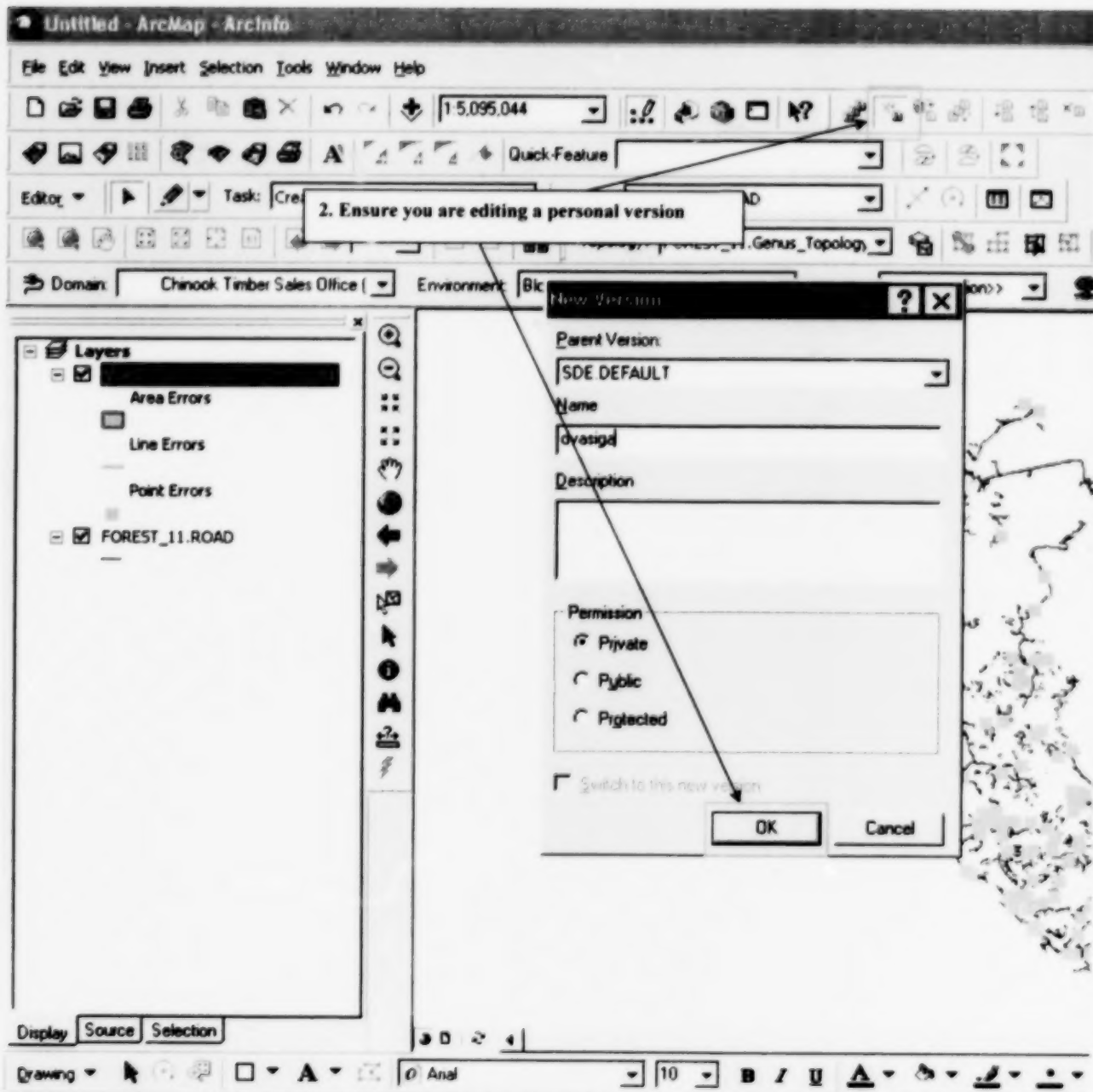
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2. Identifying Existing Errors

The screenshot displays the ArcMap application window titled "Untitled - ArcMap - ArcInfo". The interface includes a menu bar (File, Edit, View, Insert, Selection, Tools, Window, Help), a toolbar with various editing and selection tools, and a status bar at the bottom. The "Layers" panel on the left shows a list of layers: "Area Errors", "Line Errors", "Point Errors", and "FOREST_11.ROAD". The "Task" dropdown is set to "Create New Feature", and the "Target" dropdown is set to "FOREST_11.ROAD". The "Topology" dropdown is set to "FOREST_11.Genus_Topology". A callout box labeled "1. Enable the Topology toolbar" points to the "Tools" menu item in the right-hand pane. The right-hand pane lists various toolbars and functions, including "Dimensioning", "Disconnected Editing", "Draw", "ECW and ER Mapper", "Editor", "Effects", "GPS", "Genus GEO Data Manager", "Genus GEO Hydrology Tools", "Genus GEO Main Toolbar", "Genus GEO MapPlot Toolbar", "Genus GEO Overlay Toolbar", "Georeferencing", "Geostatistical Analyst", "Graphics", "Labeling", "Layout", "Map Cache", "Network Editing", "Publisher", "Raster Painting", "Route Editing", "Spatial Adjustment", "Spatial Analyst", "Standard", "StreetMap", "Survey Analyst", "Survey Editor", "Survey Explorer", "Tablet", and "Tools". The "Tools" menu item is highlighted, and a line connects it to the callout box.

1. Enable the Topology toolbar



Creates a new version

698516

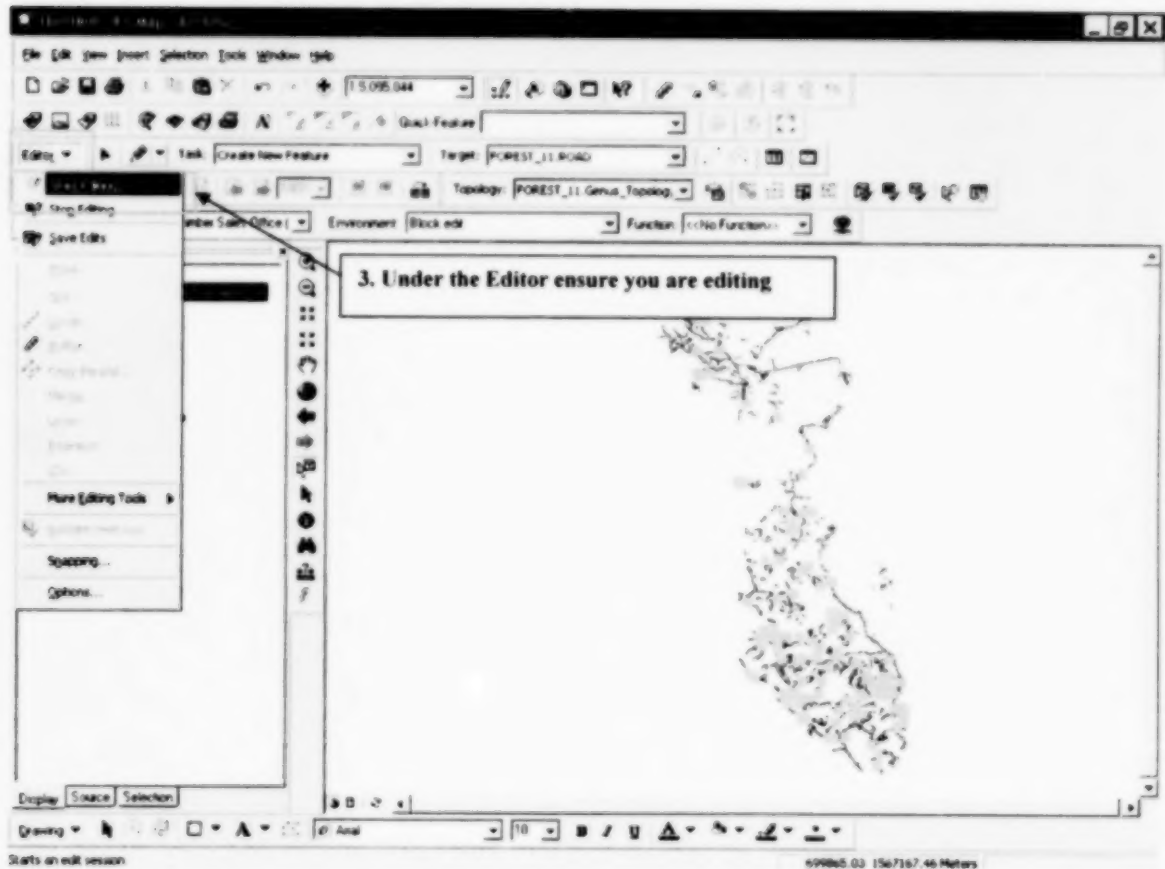


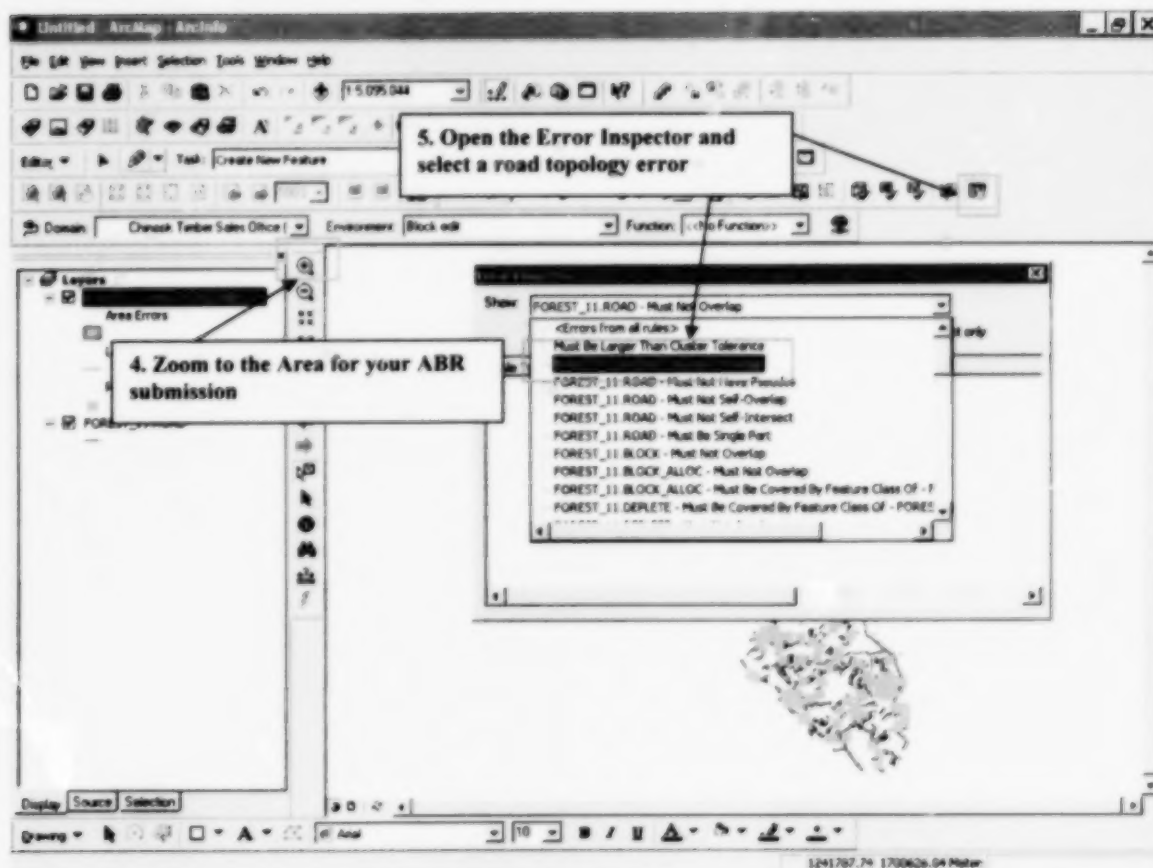
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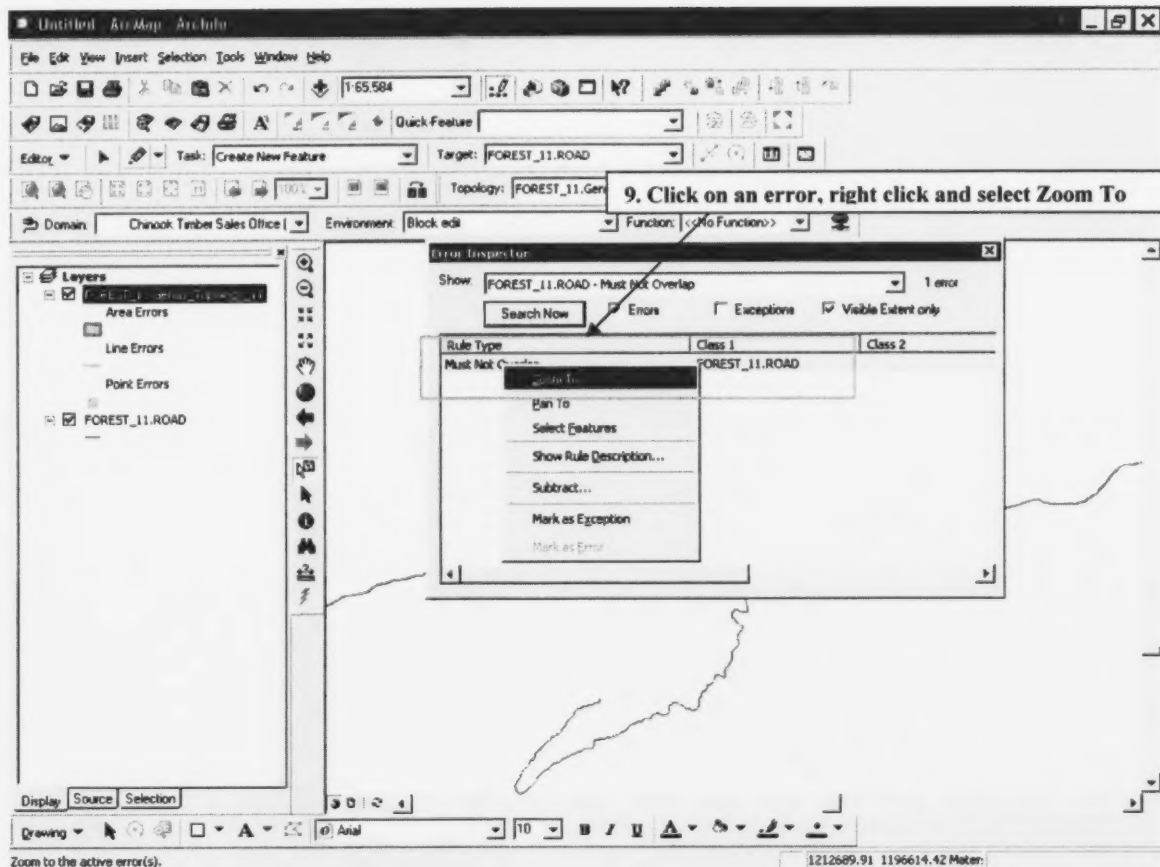


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The screenshot shows the ArcMap interface with the following components:

- Layers Panel:** Lists various layers including **FOREST_15.Genus_Topology_15** (with sub-items: Area Errors, Line Errors, Point Errors) and **FOREST_15.ROAD**.
- Task:** Set to **Create New Feature**.
- Target:** Set to **FOREST_15.ROAD**.
- Topology Window:** Shows **Topology: FOREST_15.Genus_Topology_15**. A point error is highlighted on the map.
- Error Inspector Window:** Displays a list of errors. The first error is highlighted in black.

8. The error is centred in the window and highlighted in black

9. The error description is available in the Error Inspector Window

Error Inspector

Show: **<Errors from all rules>** 264 errors

Search Now ☒ Errors ☐ Exceptions ☒ Visible Extent only

Rule Type	Class 2	Shape	Feature 1	Feature 2	Excep
Must Not Have Pseudos	FOREST_15.ROAD	Point	30383	33004	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	27174	31820	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	27858	30837	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	26611	27689	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	25894	33903	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	29085	30311	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	26587	33745	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	33018	33763	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	29584	34061	False
Must Not Have Pseudos	FOREST_15.ROAD	Point	26274	32444	False



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3. Fixing Pseudo-node Errors

1. Open the Error Inspector and select Must Not Have Pseudos and click Search Now

Rule Type	Class 1	Class 2
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	

1 error selected

1109808.71 1015719.28 Meter



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3. Determine if the pseudo-node is valid or not (is it really all the same road?)

Error Inspector

Show: FOREST_09.ROAD - Must Not Have Pseudos 6 errors

Search Now ☒ Errors ☐ Exceptions ☒ Visible Extent only

Rule Type	Class 1	Class 2
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	
Must Not Have Pseudos	FOREST_09.ROAD	



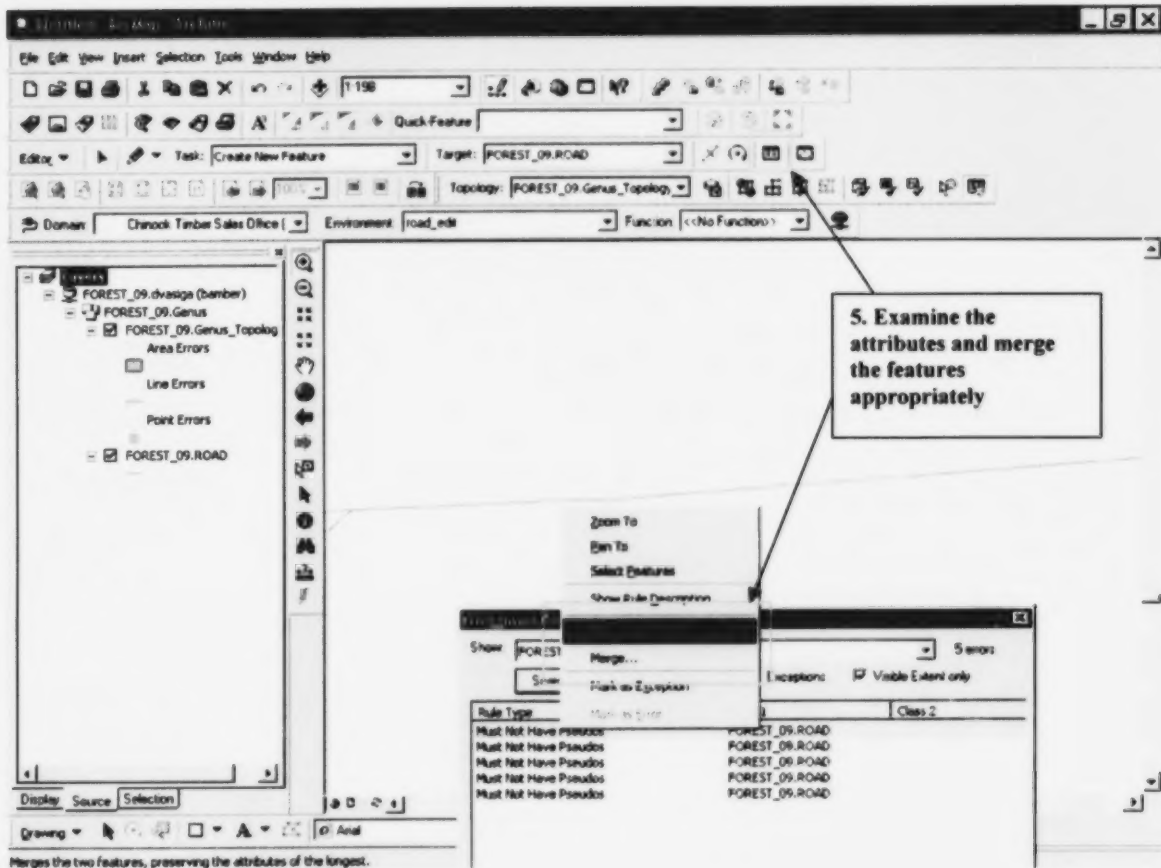
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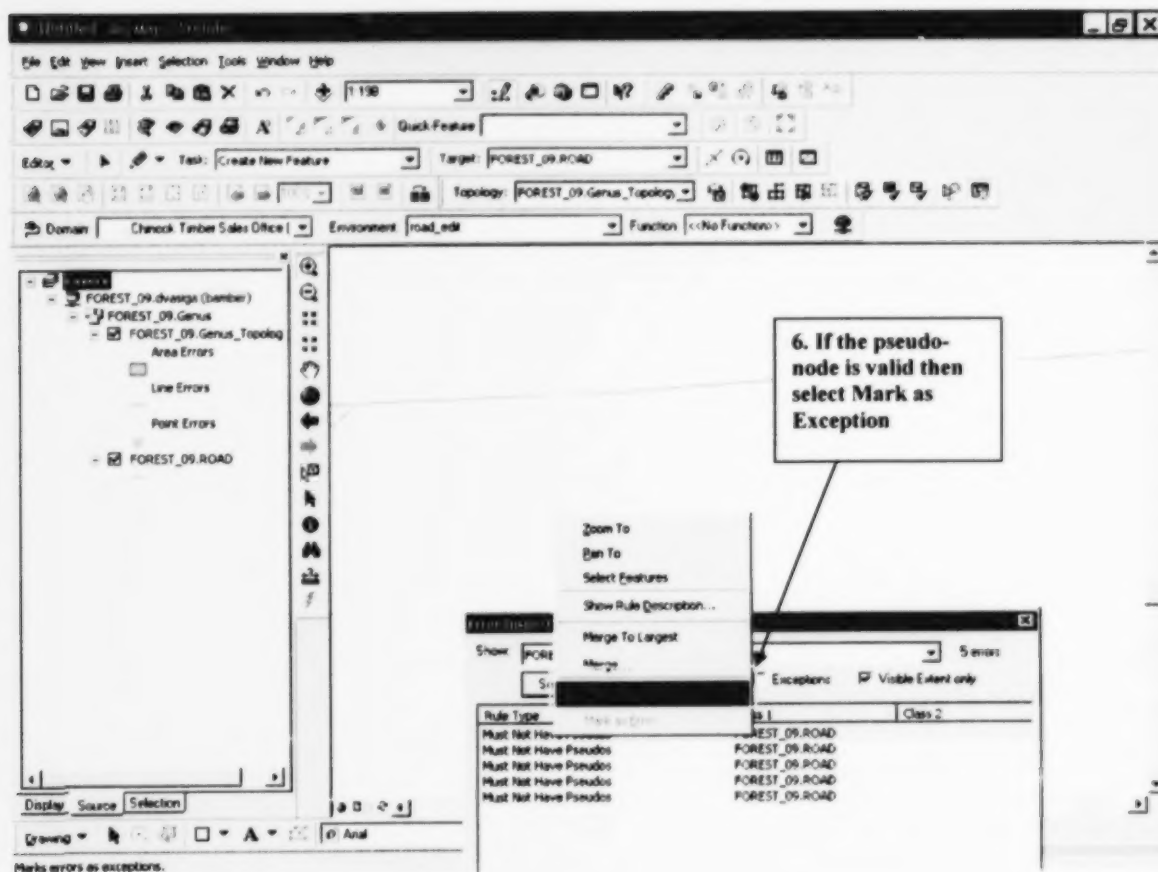
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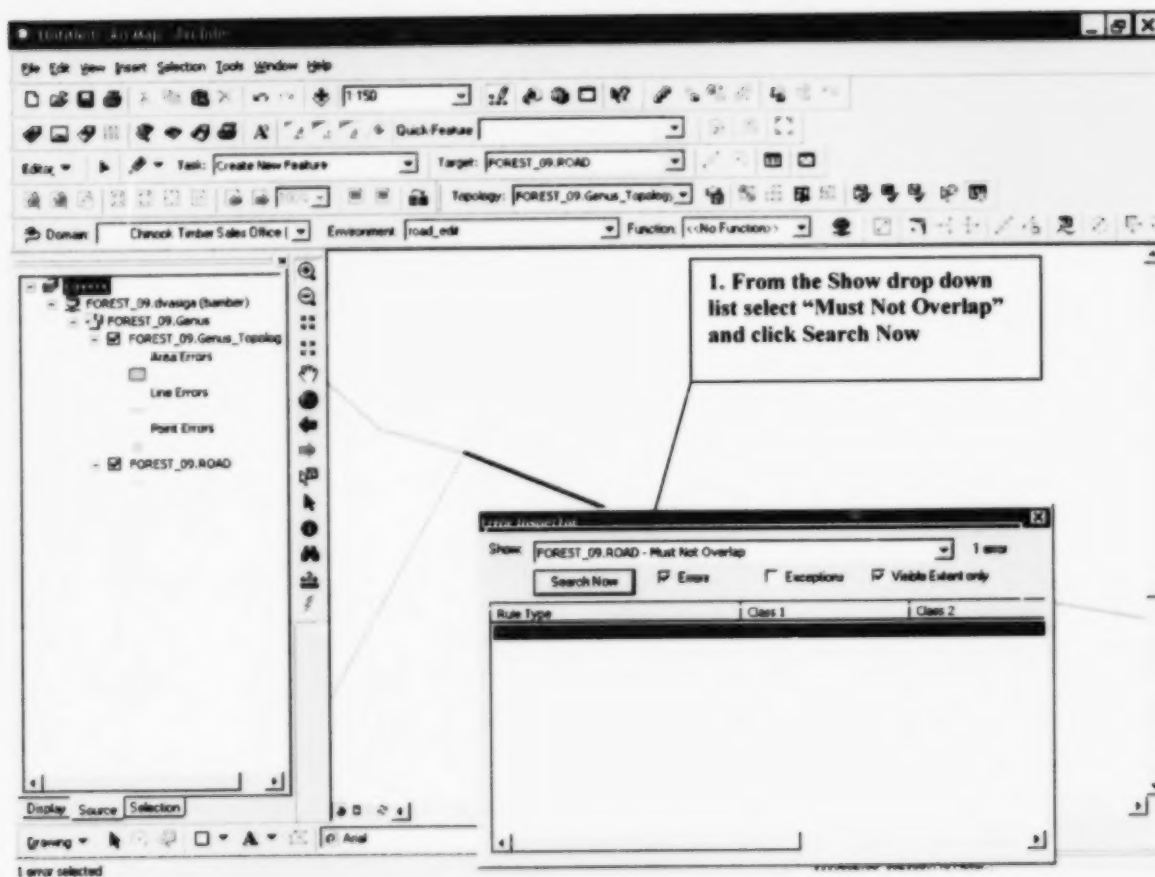
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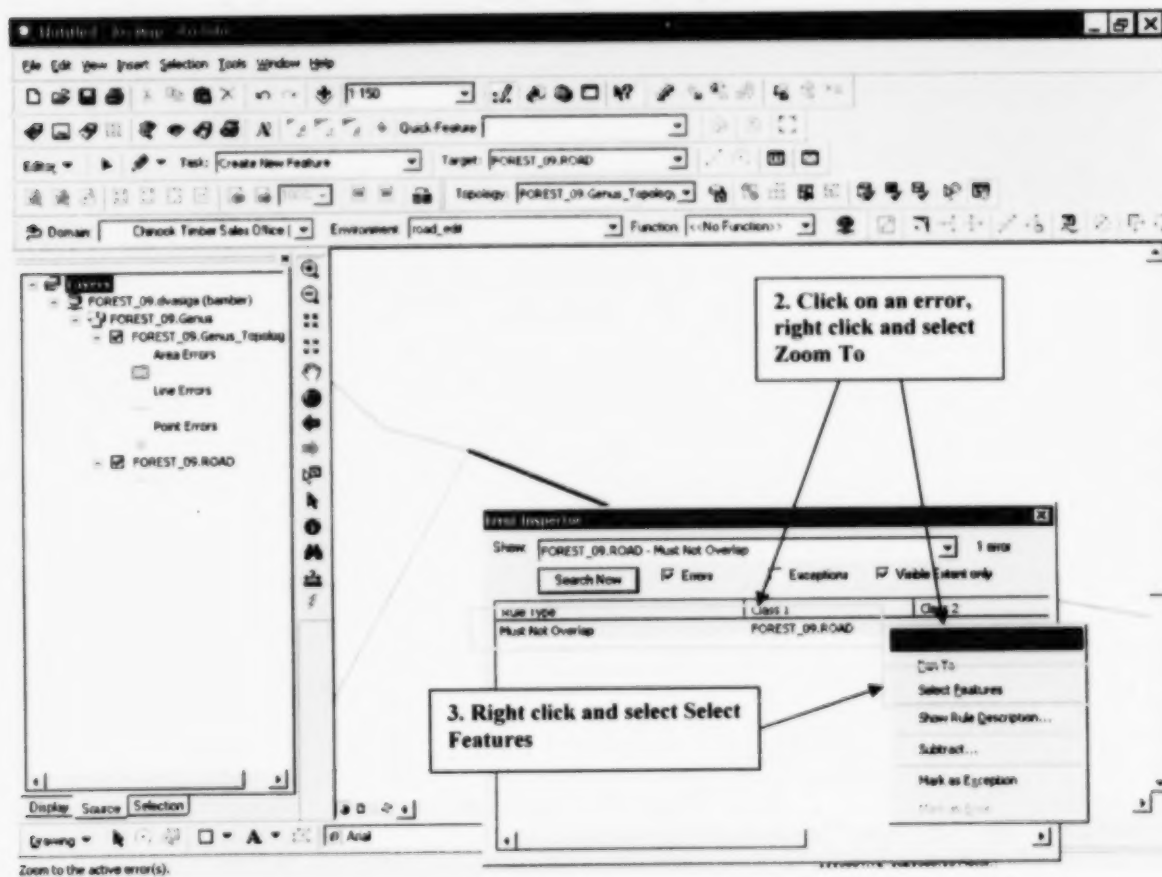
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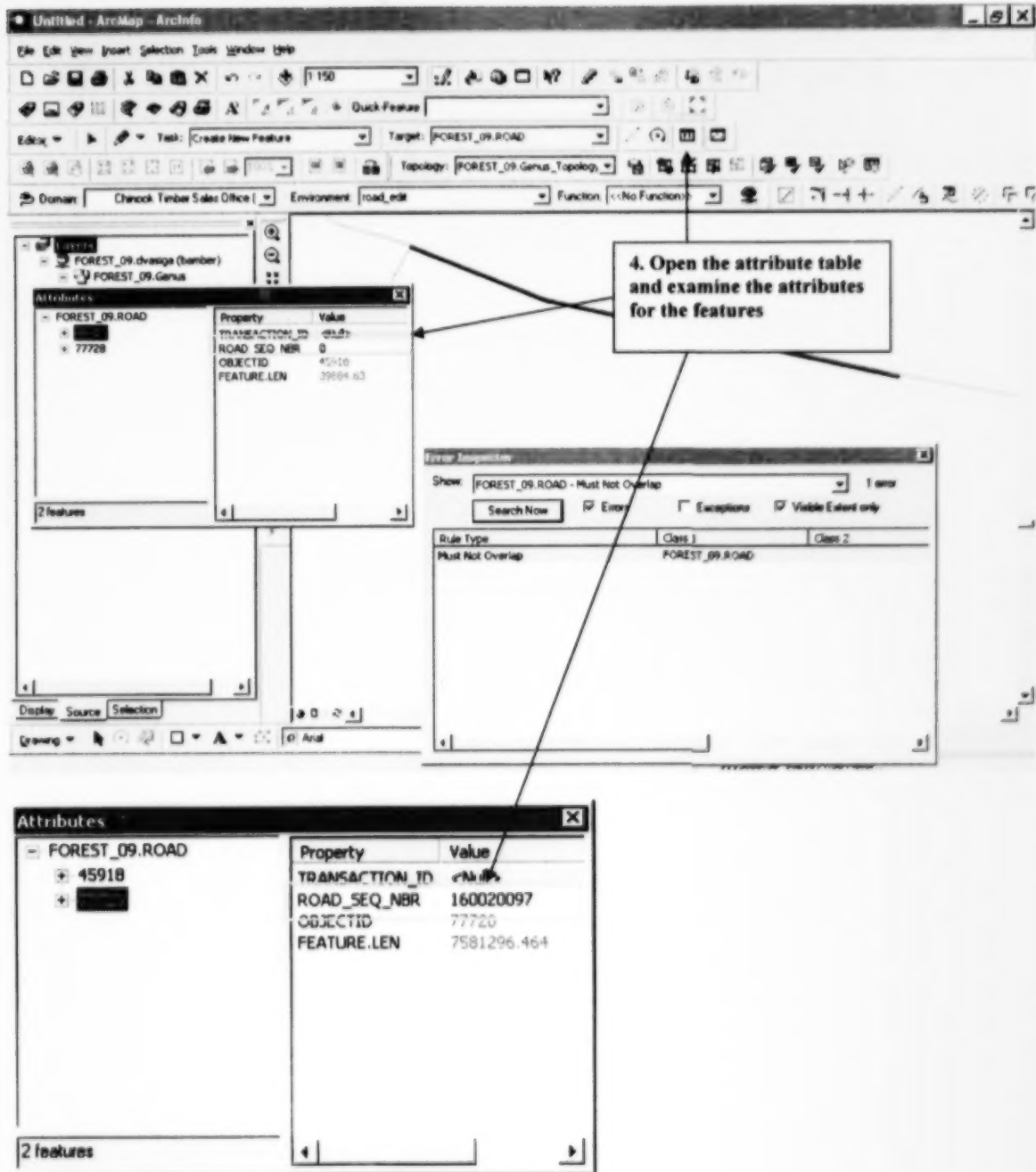
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4. Fixing Must Not Overlap Errors







4. Open the attribute table and examine the attributes for the features

Property	Value
TRANSACTION_ID	45918
ROAD_SEQ_NBR	0
OBJECTID	45918
FEATURE.LEN	39504.63

Property	Value
TRANSACTION_ID	45918
ROAD_SEQ_NBR	160020097
OBJECTID	77720
FEATURE.LEN	7581296.464

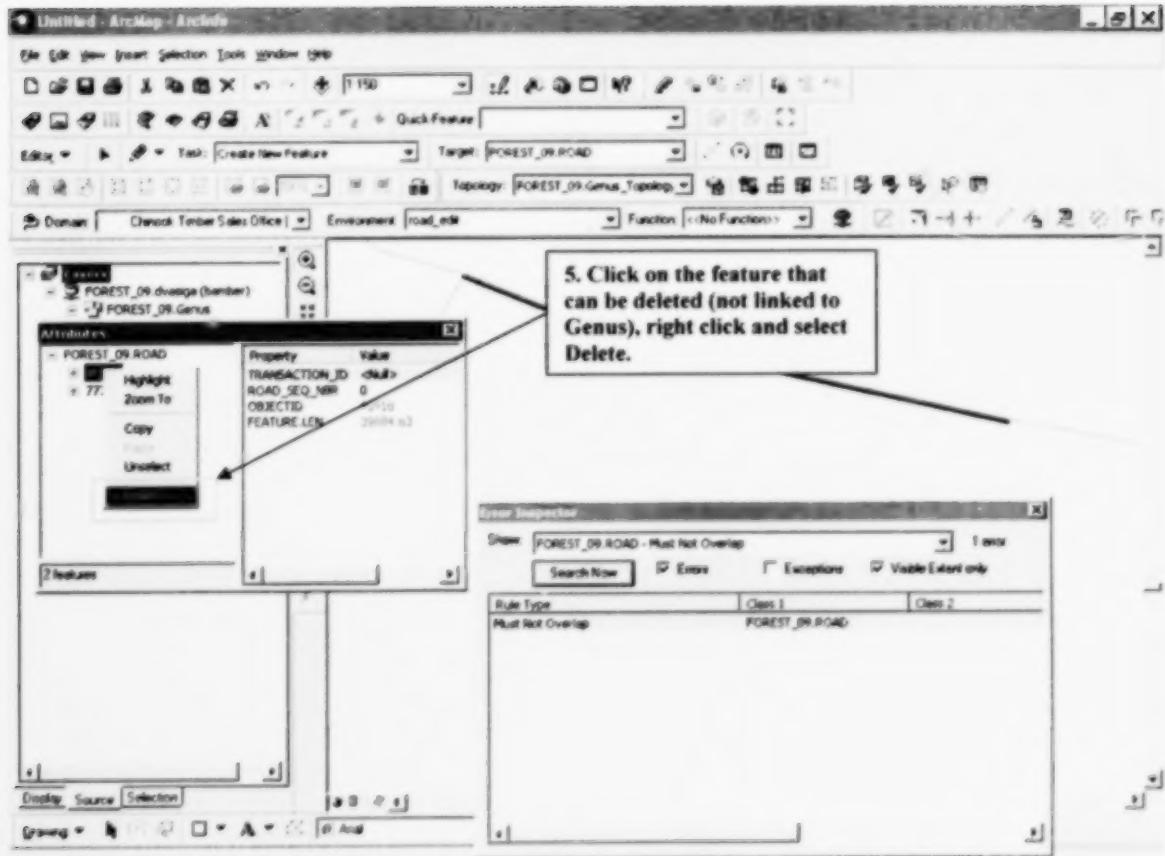


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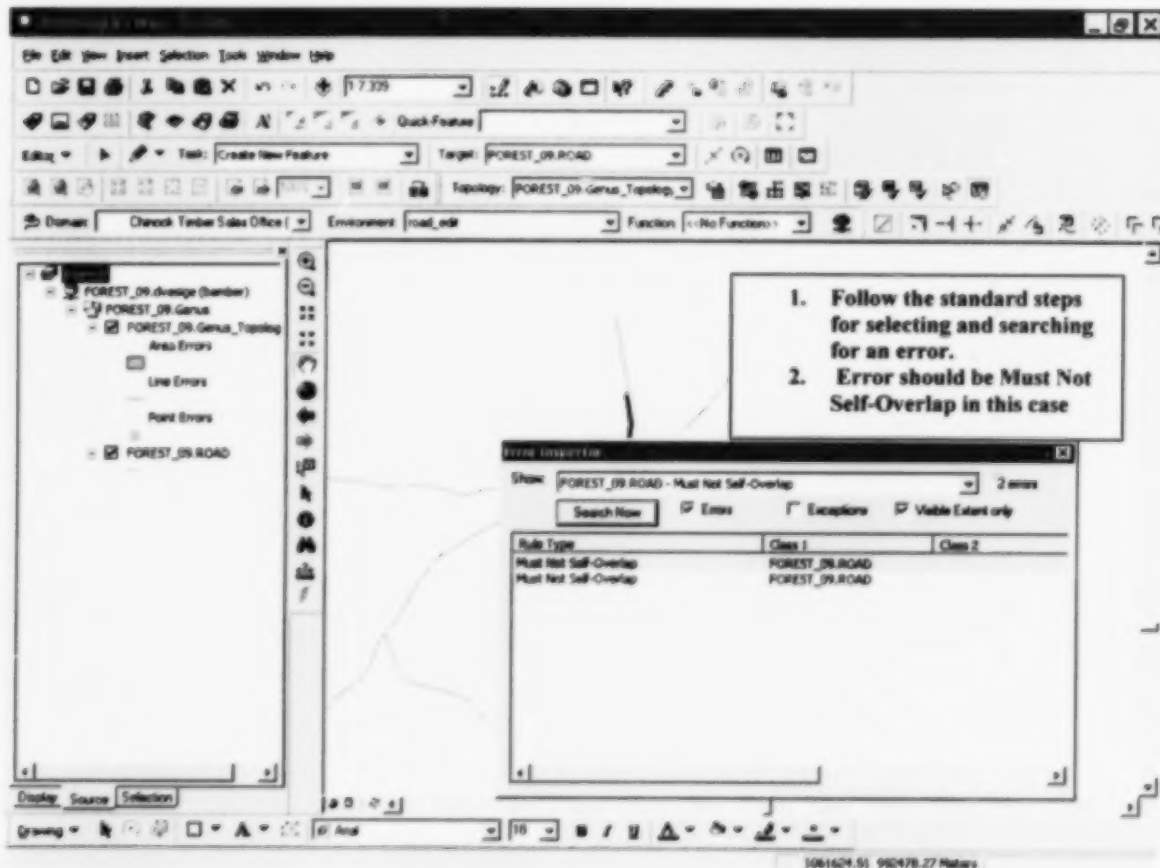
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5. Fixing Must not Self Overlap Errors



1. Follow the standard steps for selecting and searching for an error.

2. Error should be Must Not Self-Overlap in this case

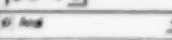
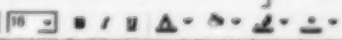
Feature Inspector

Show: FOREST_09.ROAD - Must Not Self-Overlap 2 errors

☒ Errors ☐ Exceptions ☒ Visible Extent only

Rule Type	Class 1	Class 2
Must Not Self-Overlap	FOREST_09.ROAD	
Must Not Self-Overlap		FOREST_09.ROAD

Display Source Selection

Grading     10 

1061624.51 950478.27 Meters



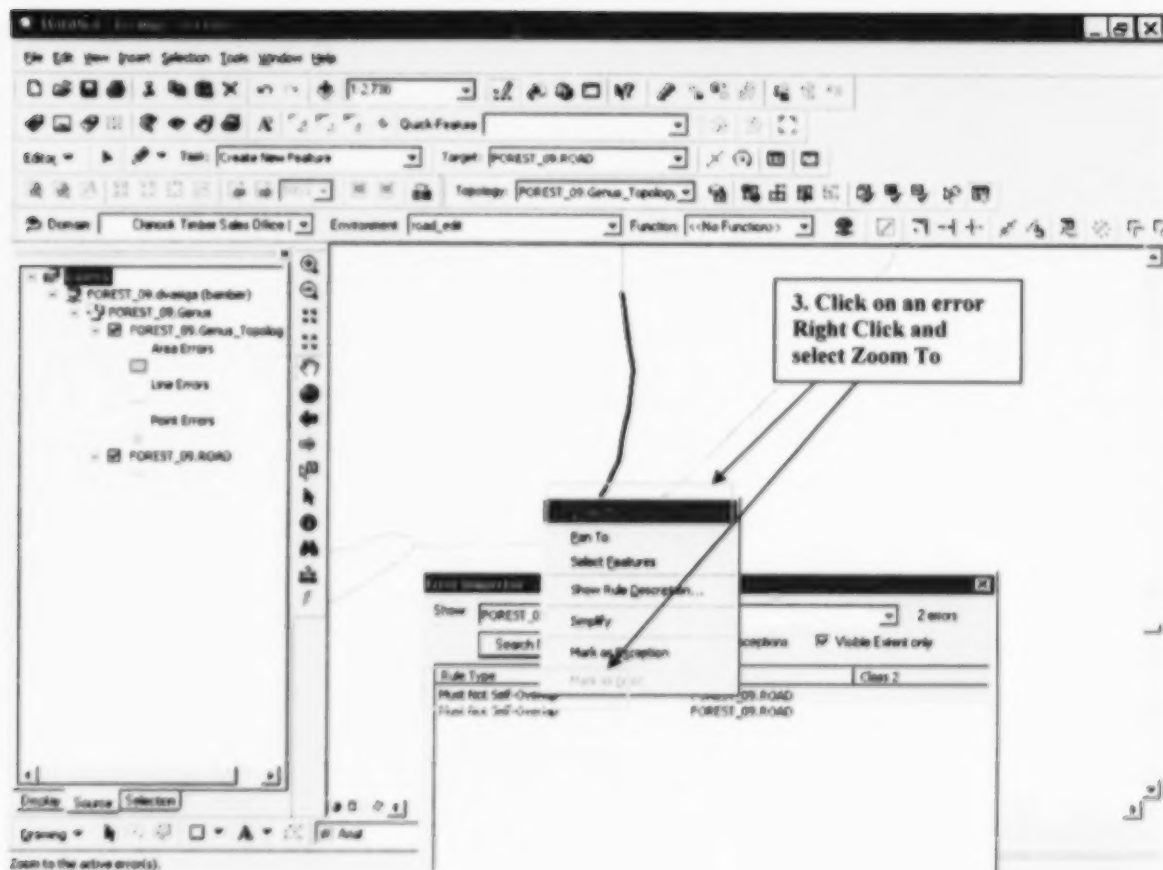
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4. Right click and select Simplify (This will re-order vertices and eliminate duplicates)

Zoom To
Pan To
Select Features
Show Rule Description...

Error Inspector

Show: FOREST_09.ROAD

Mark as Exception

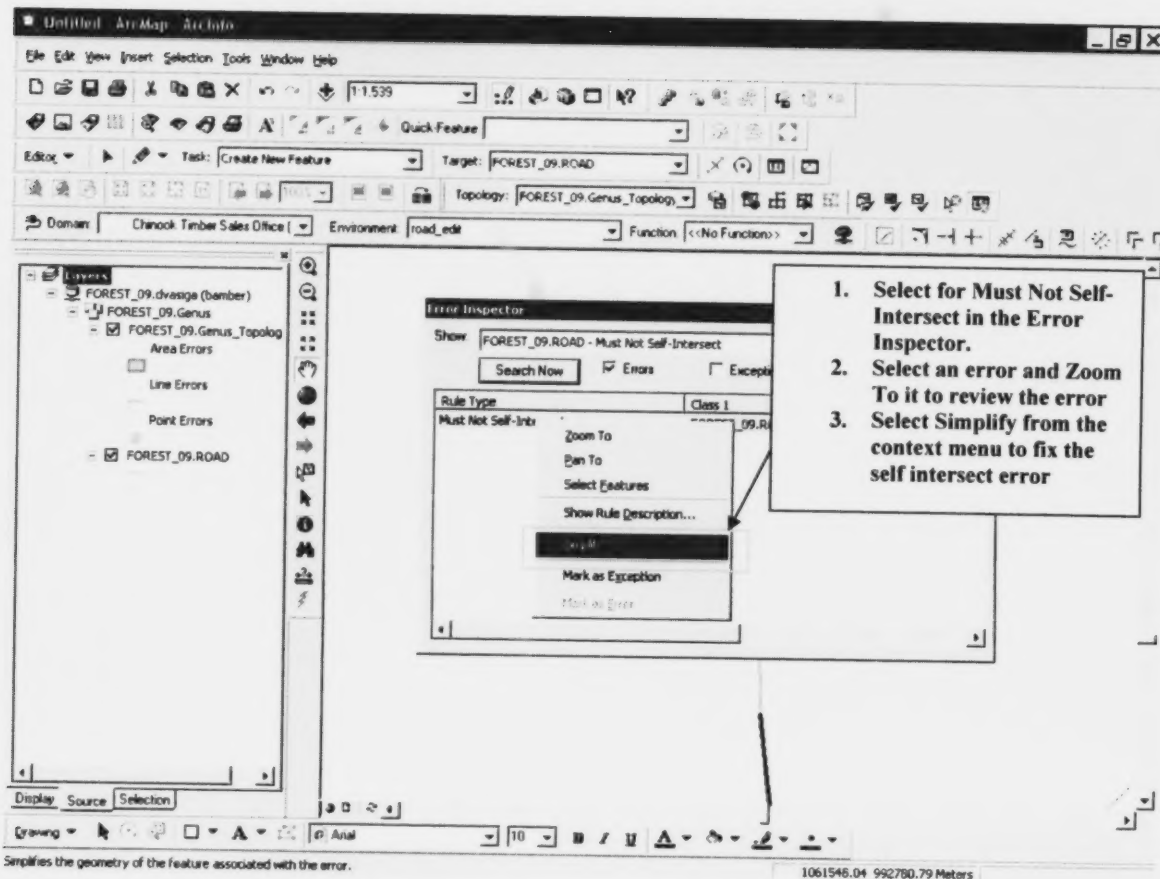
Rule Type: Must Not Self-Overlap

Exceptions: Visible Extent only

Class 2: FOREST_09.ROAD

Simplifies the geometry of the feature associated with the error.

6. Fixing Must not Self-Intersect Errors

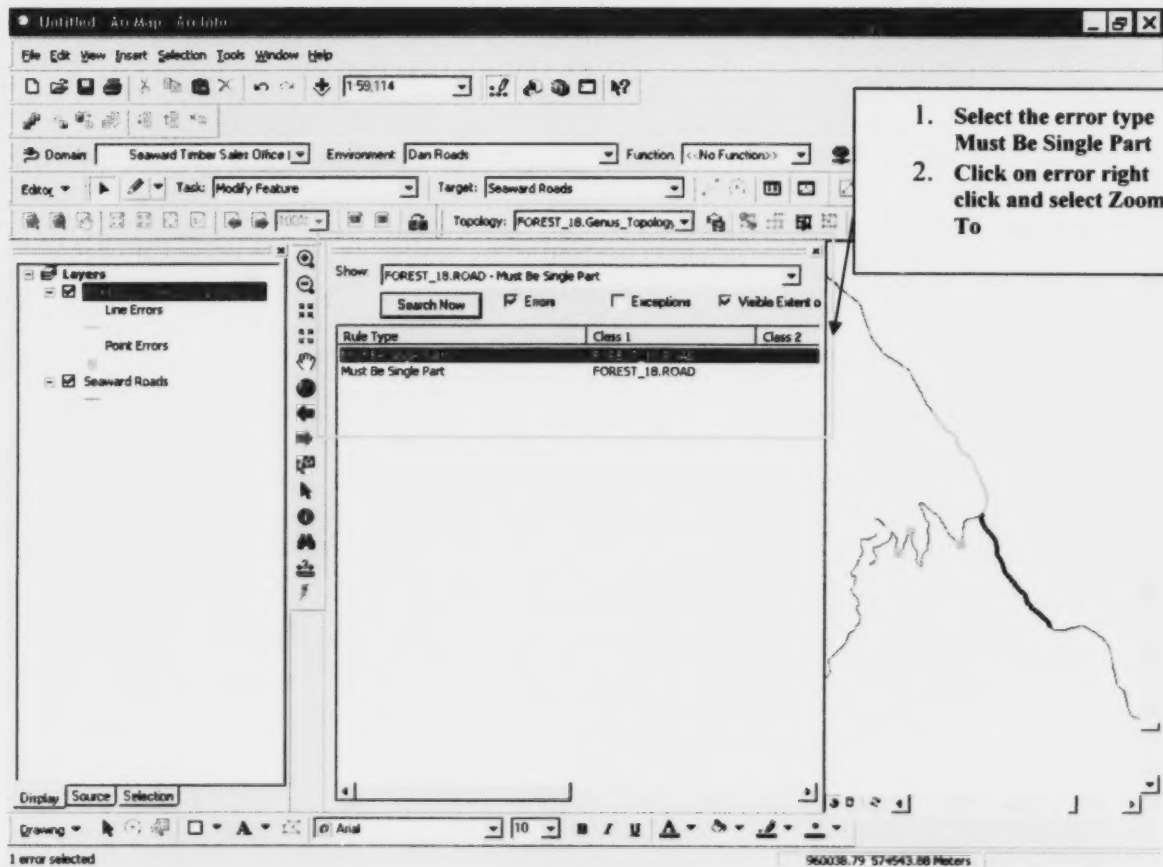


The screenshot shows the ArcMap interface with the Error Inspector window open. The Error Inspector displays a list of errors, including 'FOREST_09.ROAD - Must Not Self-Intersect'. A context menu is open over this error, showing options like 'Zoom To', 'Pan To', 'Select Features', 'Show Rule Description...', 'Simplify', 'Mark as Exception', and 'Mark as Error'. A callout box with three numbered steps is overlaid on the right side of the screenshot.

1. Select for Must Not Self-Intersect in the Error Inspector.
2. Select an error and Zoom To it to review the error
3. Select Simplify from the context menu to fix the self intersect error

At the bottom of the screenshot, a status bar message reads: 'Simplifies the geometry of the feature associated with the error.'

7. Fixing Must be Single Part Errors



1. Select the error type
Must Be Single Part

2. Click on error right
click and select **Zoom To**

Rule Type	Class 1	Class 2
Must Be Single Part	FOREST_18.ROAD	

1 error selected

960038.79 574543.88 Meters

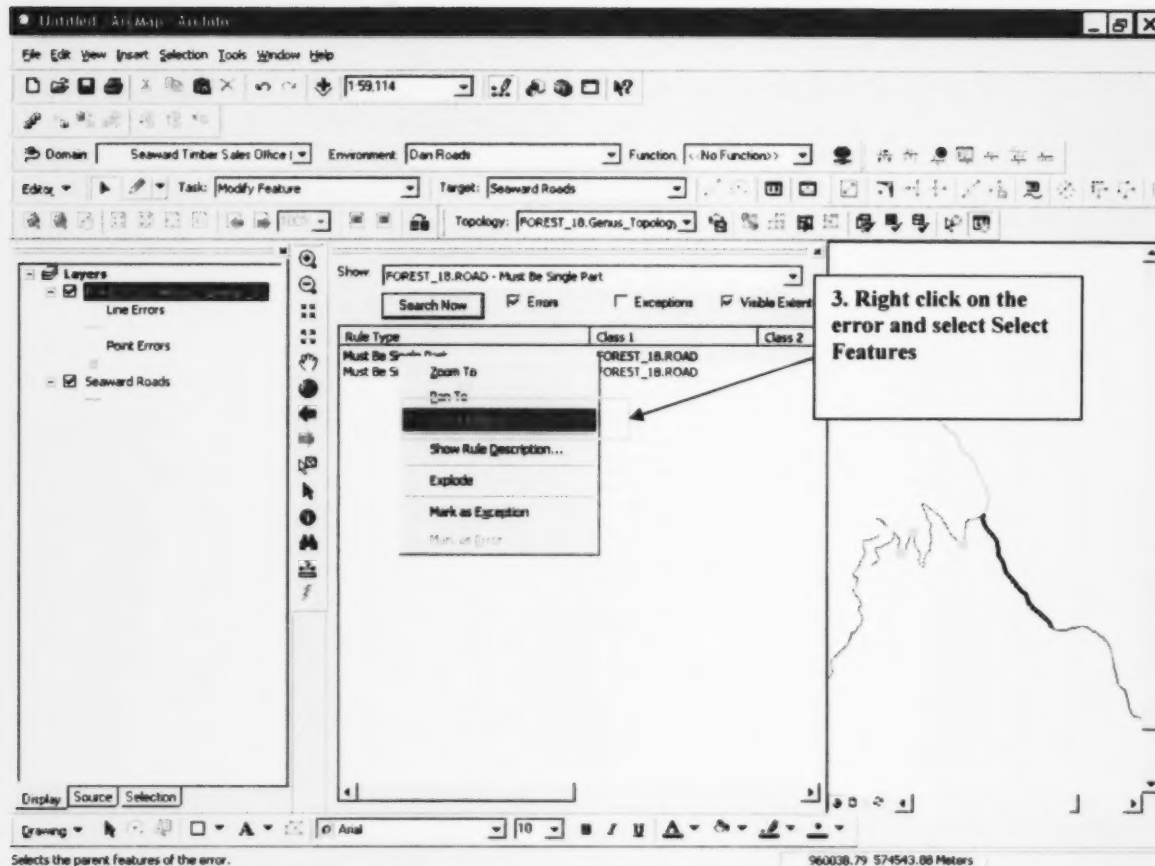


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Selects the parent features of the error.



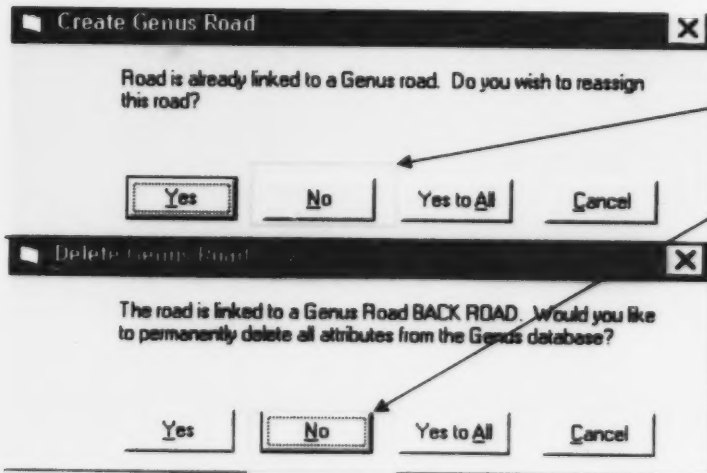
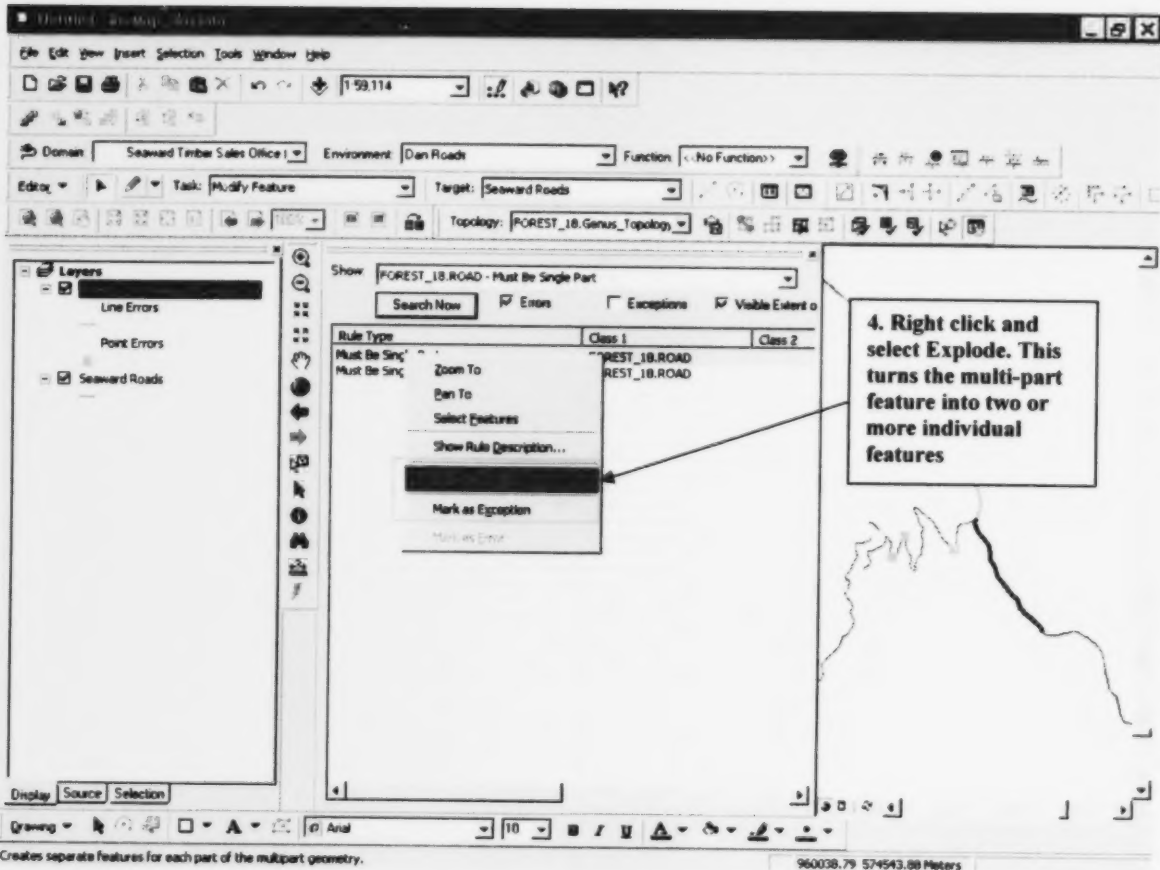
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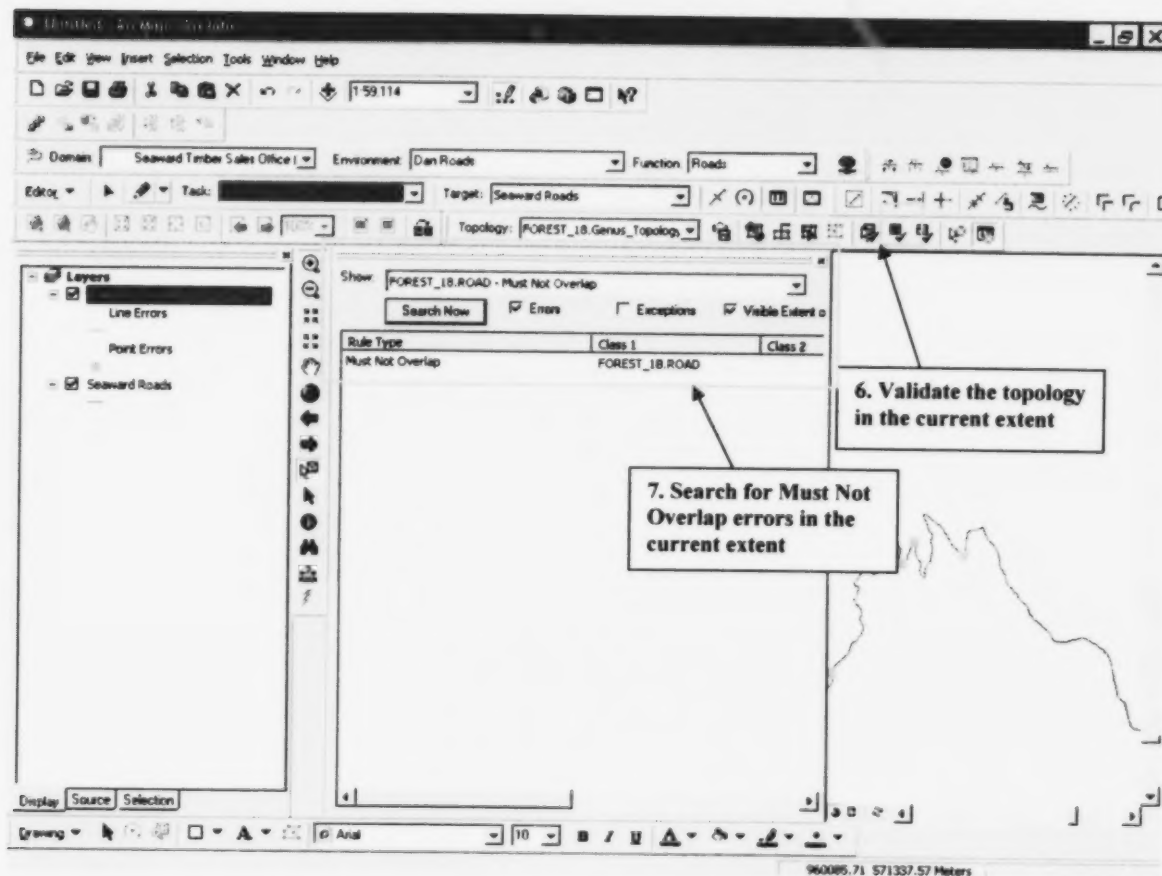


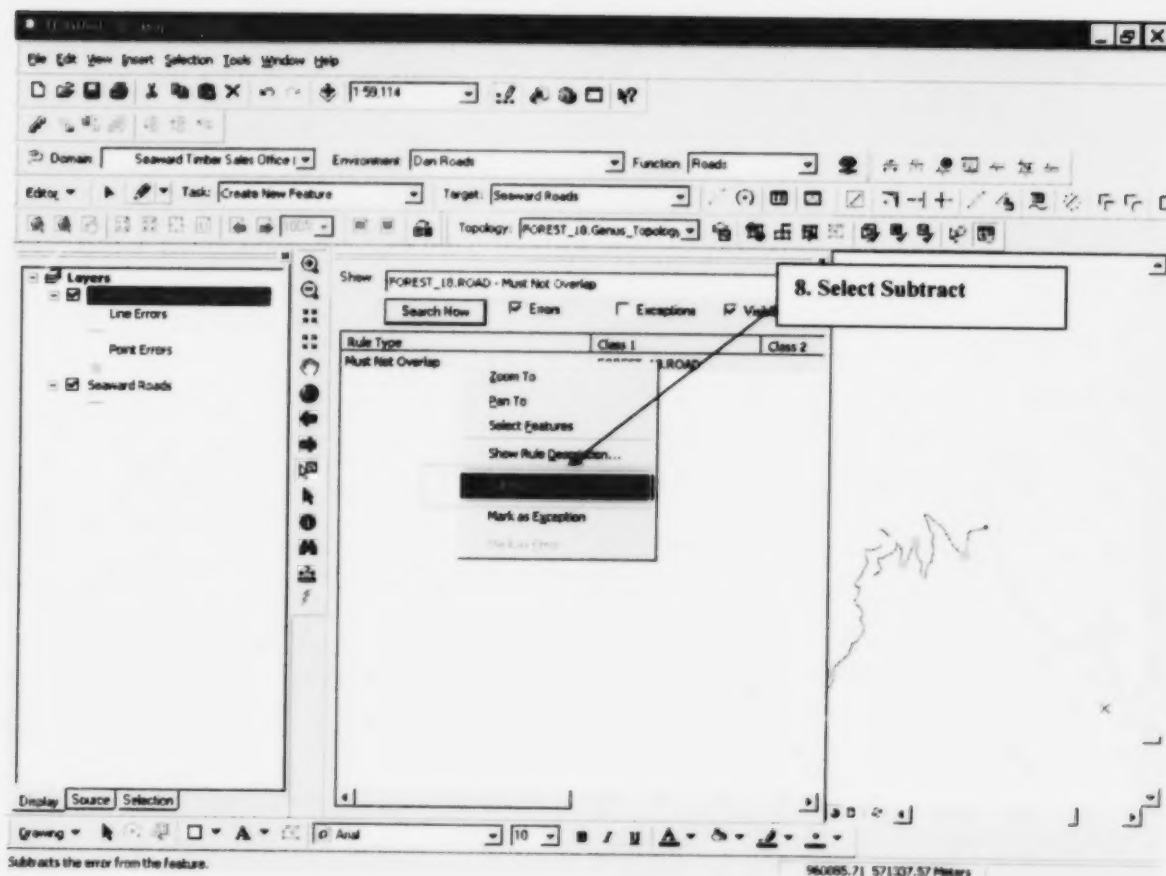
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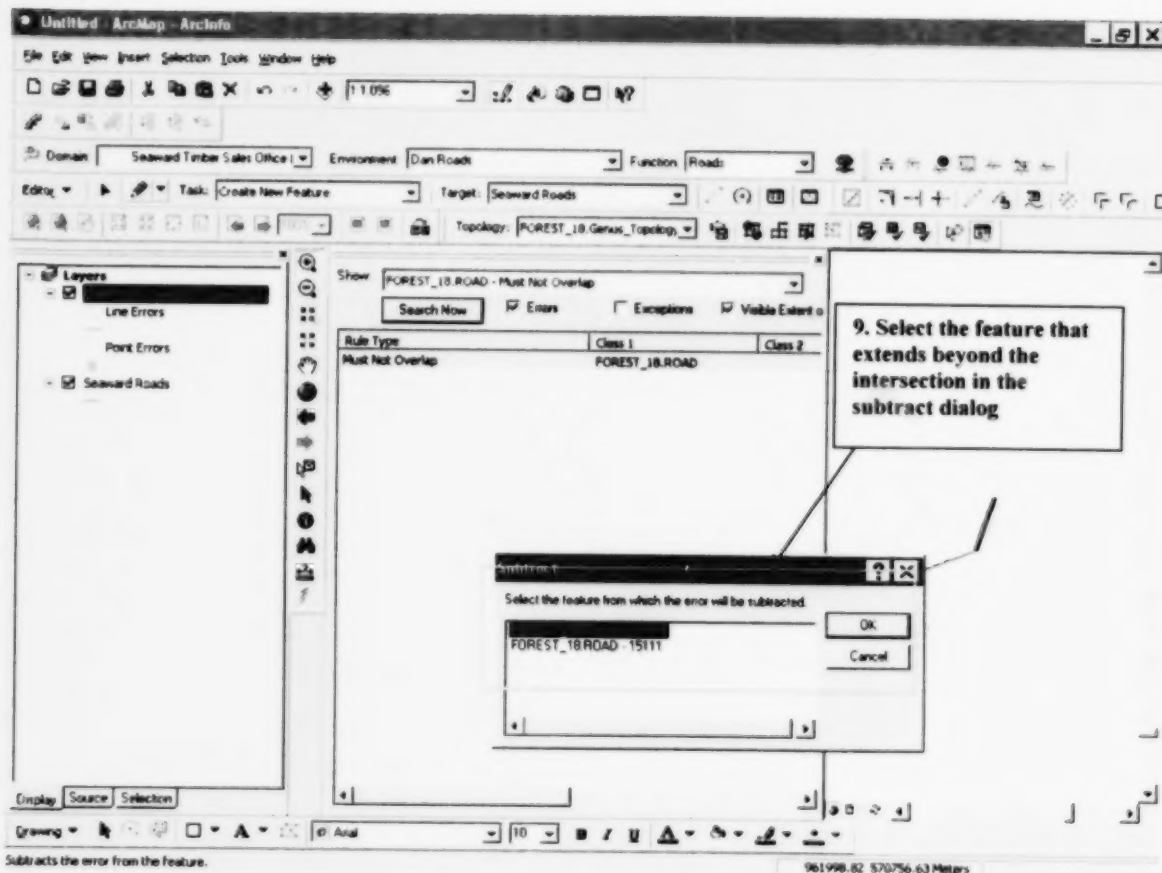


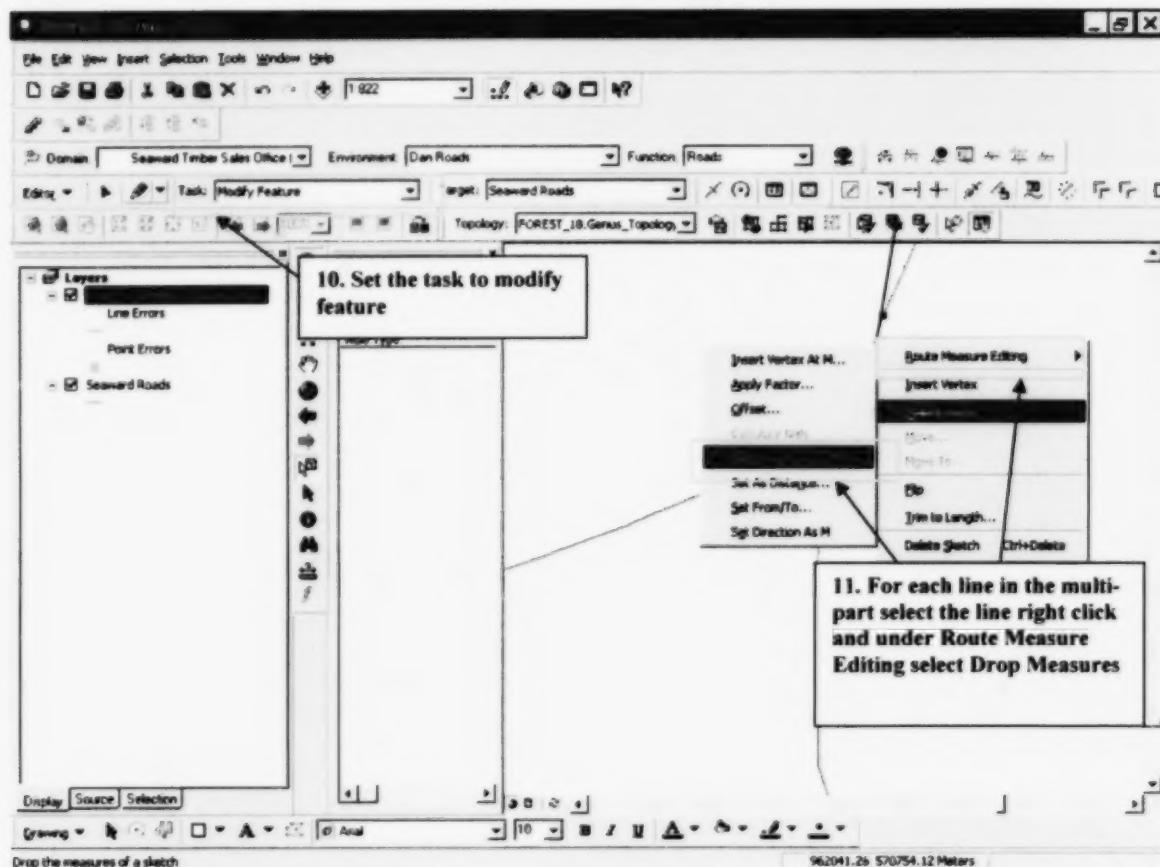




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The screenshot displays the GIS software interface with the Editor menu open. The menu options include: Start Editing, Stop Editing, Save Edits, Move..., Split, Delete, Buffer..., Copy Parallel..., **Merge**, Union, Intersect, Join..., More Editing Tools, Validate Features, Scoping..., and Options....

Callout 12 points to the 'Merge' option in the Editor menu: **12. Select each part of the multi-part (shift)**

Callout 13 points to the 'Merge' option in the Editor menu: **13. Under the Editor Menu select Merge**

The Merge dialog box is open, showing the following text: "Choose the feature with which other features will be merged:". Below this, two features are listed: **FOREST_18.ROAD - 15111** and **FOREST_18.ROAD - 15110**. The first feature is highlighted. At the bottom of the dialog, there is a checkbox labeled "Preserve overlapping segments" which is checked.

Callout 14 points to the 'OK' button in the Merge dialog: **14. Click OK in the Merge Dialog**

At the bottom right of the main window, the coordinates 961971.89 570757.39 Meters are displayed.

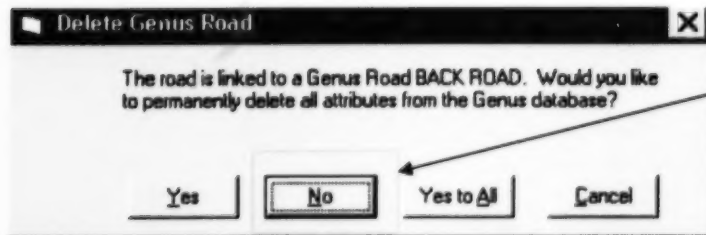


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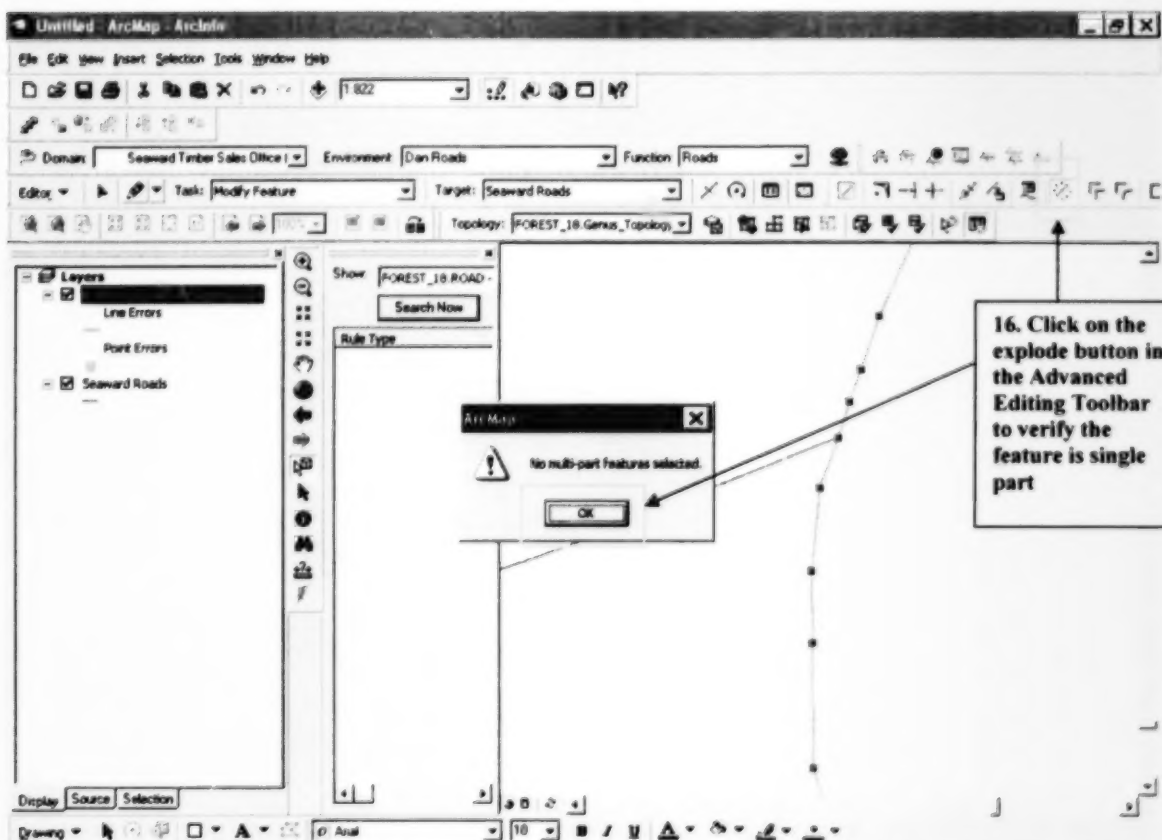
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15. Select No to the Geo prompt



16. Click on the explode button in the Advanced Editing Toolbar to verify the feature is single part

Explodes a multi-part feature into separate features

962073.00 570772.83 Meters



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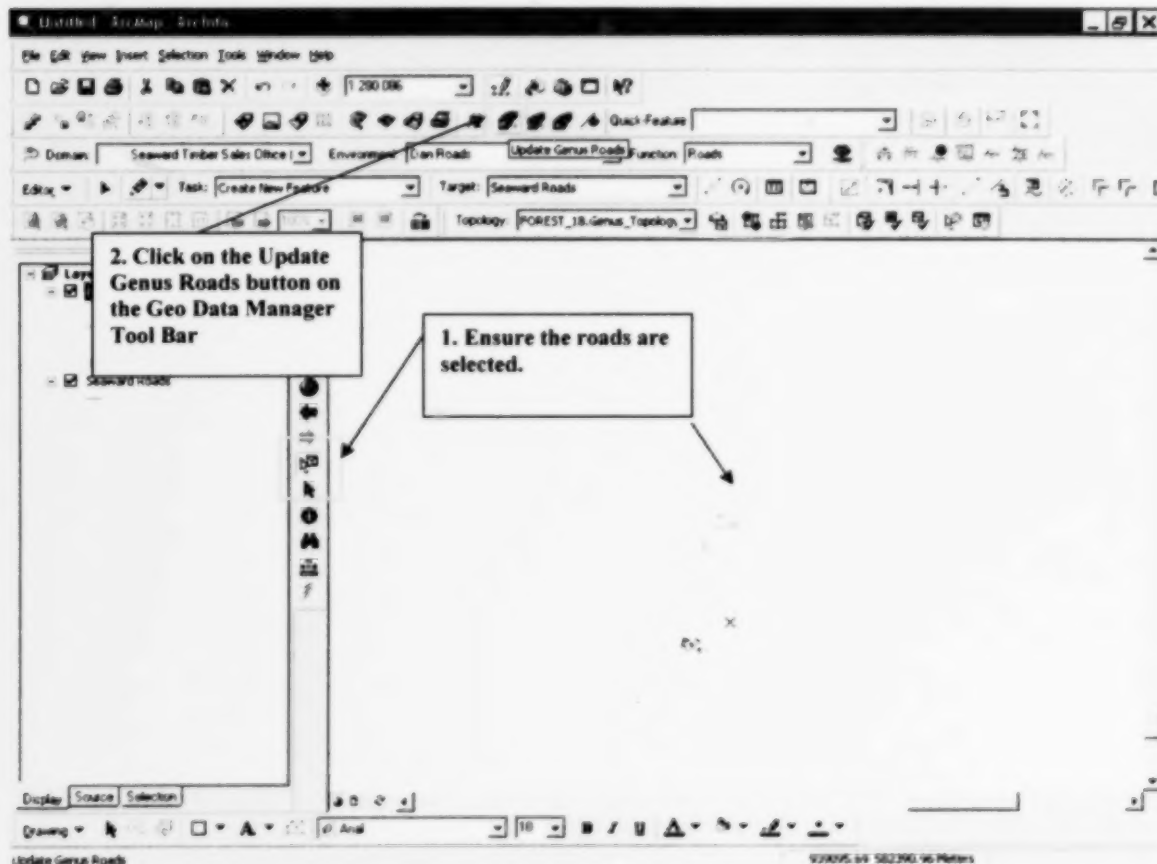
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8. Updating Edited Roads Using Geo

It is very important that all roads that are edited in ArcMap are subsequently updated in Genus. It is a good idea to select all of the roads in the area you have been editing and update them.





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9. Save Changes, Reconcile and Post Your Personal Version

It is important to save your changes regularly to ensure that you do not lose valuable edits if something happens to ArcMap. It is recommended that you save your edits every 15 minutes and after any difficult edit task.

It is also important that you reconcile and post your personal version when you are done editing. Your personal version should also be deleted. (See Editing with a Personal Version User Guide)

